6: Goudal--192-193 S-3 (1934) 1938 Laotians
116, 241, 423

"In Laos and the Moïs districts, which are sparsely populated and where there is an abundance of unoccupied land, strict rules of land tenure were much less necessary than in the countries mentioned above. Every type of ownership is to be found: the [193] tiny holding cultivated successively by father and son, ownership being confirmed merely by custom; areas belonging to a community, certain parts being temporarily cleared by fire and then abandoned again (rays), strips of forest or of grassland which are roughly developed for a time as tribes migrate from place to place."

10: d'Orleans--316 T-3 (1891-92) 1894 Laos
116, 175, 197, 241, 511, 563 Ethnic subgroups

"In speaking of the inhabitants of the principality of Luang Prabang, I referred to the Lus, the Meos and the Chinese, and a few words must be said about all three.

The first mentioned strike me as being, from an ethnographical point of view, very similar to the Laotians, whose language they speak, with a few slight differences of dialect, but they are smaller, punier and in a more poverty-stricken state. We saw one of their villages, just behind Luang Prabang, and its poverty was the most salient feature about it. Coming originally from Sibsompanas, where they form the principal element of the population, they have been driven south by Chinese wars and invasions, and several of them told me that they had not the means of returning home. Moreover, they are just as well off where they are, for, like the Kas, they cultivate the soil, planting rice fields for the Laotians."

10: d'Orleans--357 T-3 (1891-92) 1894 Laos
116, 137, 241, 439

"At the present time two vegetable products are exported from Luang Prabang, one being cardamome and the other benzoin, the latter having recently decreased 50 per cent. in value on the Bangkok market, doubtless because this perfume is now extracted from hippuric acid and other matters by chemical processes, while in time the flora of the country, which is very rich in other wild plants highly perfumed, will doubtless lend itself to fresh sources of industry.

In addition to the native products it will be easy to introduce fresh cultivations, such as the pepper tree, which already thrives in Annam, the vine, which grows wild on the plateau of the Poûon, and fruit trees of various kinds."

10: d'Orleans--368 T-3 (1891-92) 1894 Laos
116, 241, 262, 438

"... The village of Muong Liep (Diap on the map), once important, now possesses only a few houses. The gardens are full of fruit trees, cocoa trees, areca nut trees, oranges, bananas, and the mak tan la late, (1) which are eaten with a spoon.

1. In French, cœur-de-bœuf.

We cannot buy any rice, the inhabitants having very little. They got it from Nam Ou, or certain villages especially given to its growth."

23: Franck--271-272 T-2 (1924) 1926 Laotians
116, 131, 241, 311 Ethnic subgroup

"Sturdy enough in their natural habitat, they [EJ: of the 'Black Miao.'] must live at least three thousand feet above sea-level to be either happy or healthy, just as the Annamese must stick [272] to their miasmic rice-plains; and they never descend below that altitude if there is any way out of it. Of all the races of Indo-China the Miao are probably the most self-sufficient. In common with some other mountain tribes of Laos they burn off steep hillsides, normally every nine years, for their cultivation. When they need new fields to plant, they fell the biggest trees and set afire great patches of the jungle-forest, destroying wood and lumber enough to supply a large city for years to come. This burning is partly to drive off the blackleg fever and partly to give room for grass for their cattle; and as cinders make good fertilizer for a few years, their crops are abundant until it comes time to burn off another mountain-side. As this burning by patches has probably been going on for centuries, much of the Laos is not so forested as one expected to be, but often covered with those half-grown forests which the French call brousse. Yet with all the uneven growth there are many magnificent panoramas of densely forested ranges."

69: Lewis T-5 (1950) 1951 AM1 Indochina
Laotians AM8

slaughterers are obliged to work by flares, which is responsible, the French think, for an unusually picturesque effect. It is 'not done' to go along while the actual killing is in progress, but shortly after, when the carcasses are suspended from hooks to be cut up, and the workers, stripped to their loincloths, and garishly splashed, paddle about in a vermilion sea. Cars are stationed just beyond the reach of the steaming odours, and one is recommended to see the thing as one views a nude in a picture gallery – that is, divorced from all but a disinterested abstraction, in this case the colour.

The possibilities of Vientiane, it was clear, would be quickly exhausted. Thao Nhouy, the Laotian Minister of Education, lent me his jeep to see some of the surrounding villages, but the roads were so appalling that it broke down after being driven for about five miles. He then suggested that I might like to see the local schoolgirls dancing, and when I said that I would be delighted, and asked for permission to take photographs, the girls were sent off home, on their bicycles, to get their best clothes. An hour or two later they began to trickle back, wearing their mothers' jewellery as well as their own and with their silk finery done up in paper parcels. When they had dressed and were ready they made a glittering sight. One girl wore a scarf ornamented with real gold thread said to be worth about £50 in English money. They danced under the supervision of a teacher whom I recognized as a professional actor, from the *boun*[1], and who occasionally intervened when a girl failed in some minor feat, such as bending her fingers back at an expressive ninety degrees from the palm.

All these girls, dressed as they were like princesses, came from shacks in the forest. Each one had a bicycle – infallibly fitted with dynamo lighting, and sometimes 3-speed gears. It seems that a bicycle for his daughter is one of the essentials for which a Laotian will work. It is considered ill-bred and irreligious in Laos to work more than is necessary. The father of a family cultivates an amount of land, estimated, by a bonze who is expert in such matters, to be

[1] [i.e., Laotian religious festival. --Analyst]

69: Lewis T-5 (1950) 1951 AM1 Indochina
Laotians AM8

241 sufficient for his requirements. If there are six members of the
461 family, six standard, equal sized portions of land will be cultivated.
511 If a child is born into the family another piece of land is cleared and
792 worked. When a member of the family dies, whether it be a baby or the grandfather, cultivation of his portion will be stopped. Just enough is produced for the family to eat and to provide a small surplus sold in the market – *with the bonze's approval* – to buy occasional strict necessities, like a silk shawl and a bicycle for the
735 daughter. There is no social insurance and there are no poor. The
556 old and the sick are supported by the young, or, where they are
792 left without able-bodied providers, by the community, and the
771 bonzes give instructions for the necessary land to be placed under cultivation for them. The accumulation of wealth which is not to be used for definite, approved purposes, causes a man to lose prestige among his neighbours, just, as in the West, the process is reversed. The main difference, it seems, between Buddhism in Indo-China, and Christianity – apart from any question as to their relative merits – is that, whether we admire it or not, the former is largely put into practice.

It is a stimulating reflection that the Western millionaire, obsessed for the sake of social distinction with the amassing of enormous possessions – little of which he can personally consume – would attain the same ends of personal celebrity under a Laotian Buddhistic order of things by his priestly austerities – by embracing the most abject and prestige-conferring form of poverty.

181 For this reason perhaps the local Evangelist missionary and his
771 wife have made no converts. Like all who have lived among the
785 Laotians they are charmed with them – although, of course,
797 disappointed at their blindness. They also deplore their immorality.

In the matter of converts the Evangelists have been no more unsuccessful than their Portuguese, Spanish and French forerunners. The Laotians having little capacity for abstractions, either in their

000 If death had not placed a brutal term on his wanderings a few weeks later, the serious Mouhot might also have been the first man to question the impassive Buddhas on the mysterious past of this remote land, felt the infinite charm of its melodious nights when the khenes give voice to their moving chords, and -- who can say? -- sung the grace of the pretty girls with bare and gilded breasts who in their carefree way weave multicolored scarves under their flowered huts.

105 He contents himself with noting rapidly: "Fortunately this is not like Siam, and I can get help from the natives. . . . The /225/ Laotians are peaceable, submissive, patient, sober, trusting, credulous, superstitious, faithful, simple and naive. They naturally /685/ hold robbery in horror. The story is told that one of their kings had thieves fried in a cauldron of boiling oil, but since the ravages of the last wars a certain number of thieves are beginning to be found among them who have been driven to rapine by poverty or by the spirit of vengeance.

/685/ "Besides cultivating rice and maize the Laotians grow batatas, /241/ gourds, red peppers, melons and other vegetables. . . . They sell /438 the Chinese ivory and pelts from tigers and wild animals. They 434/ also trade gold dust, silver and copper ore, gamboge, cardamom, lac, wax, dyeing wood, cotton, silk and all the products of their soil for heavy porcelain, small glassware and other small commodities of Chinese industry.

"The Laotians are not made for war. Ever since the beginning they have been subjected to the neighboring kings, and have never been able to shake off this heavy yoke.

"They seem to be more industrious than the Siamese and to /101/ possess more of the spirit of adventure and trade. Although both peoples /226/ have many points of resemblance, both physical and moral, the Laotians can nevertheless be distinguished by their dialect and especially by their customs, which are simpler and more amiable.

533 "...Their music is very sweet, harmonious and sentimental.
101 Only three people are needed to make a melodious concert. One plays a bamboo organ, the second signs romances with the accent of a man inspired, and the third strikes strips of a sonorous wood together in rhythm, the clicking sounds of which have a striking effect" (1).

1. This praise of Laotian music should be compared with the

132 a climatic dividing line. On the Annam side, in fact, each monsoon has its rainy season, a fact which makes it possible to grow two rice
133 crops per year. On the Laotian side there is one rainy season and one dry season. The two are sharply separated, so that there can be
241 only one crop. The chain runs parallel to the coast of Annam in a northwest-southeast direction, leaving Annam only a narrow strip of terrain, while it enables the Mékong to be joined on its left bank by watercourses which often stretch over wide extents. On the Annam side the slopes are steep and the valleys narrow. On the Laotian
137 side the slopes generally do not terminate so abruptly. They come down to the Mékong in successive stages, first forming plateaus or folds in the terrain which are covered with thick forests (Dong in Laotian), then gentler undulations on which there are forest glades (Khok in Laotian) and finally the vast ricefields which stretch down to the Mékong.

137 The large thick forests have the same wild appearance as in northern Laos. Oftentimes they do not even let the sun's rays through,
132 and form domes of foliage which hide the horizon.

The forest glades have two different aspects, depending on the season. During the rainy season there is shadow and often a carpet of verdure, while during the dry season the bare trees and the naked soil which is covered only with dead leaves and reflects the burning rays of the sun, give the appearance of a desolate and abandoned land.

133 The Annamitic Chain first separates the Nam-Nhoang, a right-bank tributary of the Nam-Ka-Dinh, from the Song-Ca which flows into the Gulf of Tonkin near Vinh. It enters the province of Cammon, where its average altitude is 1000 to 1200 meters. The ridge of Tram Mua, on the road from Vinh to Pak-Hin-Boun, is at the 1280 meter level. In Cammon there are, so to speak, no forest glades. [47] [Illustration] [48] [Blank page] [49] for the plateaus themselves usually run down to the banks of the Mékong.

133 Of the latter, the most noteworthy is that of Na-Kai or Pou-Hac,
137 the limits of which are formed by the courses of the Nam-Hin-Boun and of the Sé (1) -Bang-Fai. This vast plateau lies at an altitude

(1) Nam and Sé mean river. Nam is the term generally employed in northern Laos, and Sé in southern Laos.

of about 800 meters and, like the plain, is covered with forest

glades, but "instead of the oil trees, bogus teaks with their whitish foliage and their trunks deeply dented with wide grooves, we find gigantic, shade-giving pines; and instead of the bare, powdery or viscous soil, a fine level turf on which it is a pleasure to walk and where it is enjoyable to linger and slow one's pace" (2). 133 137

(2) Letter from Captain Rivière, reproduced by Captain Gosselin in Le Laos et le Protectorat français, 1900. [113]

It is also a region of wild beasts, and the inhabitants of the muong of Ma-Ha-Saï come there every year to hunt elephants. [136]

At the very source of the Sé-Bang-Faï there springs up a noteworthy peak about 1200 meters high from which many watercourses flow down to the Annam coast.

South of this point the Annamitic Chain drops to give way to the gap of Aï-Lao (about 410 meters in altitude) on the road from Savannakhèt to Quang-Tri. Then the chain rises to form walls which are often more than 2000 meters high in the provinces of Saravane and Attopeu. Thus, Pou-Atouat has an altitude of about 2500 meters. It is an important orographic center from which spring the Sékhong and the Poyo, which belong to the Mékong basin, and also the Song-Buong, a tributary of the Song-Caï which is a coastal river of Annam. 133

Between the Sédone and the Sékhong, at about the 15th parallel, stands the remarkable plateau of the Bolovens, which takes its name from the Kha tribe which inhabits it. It is a mass about 100 kilometers in diameter, and its height varies between 600 and 1200 meters. Travelers who have explored it have extolled the mildness of the climate, the wealth of the vegetation, the beauty of the plains and the abundance of water, so [50] that Dr. Harmand suggested the idea that the plateau, which could easily be linked by road with the port of Tourane, might be made into the administrative center and sanatorium of our Indo-Chinese empire. [132]

The part which the plateau may be called on to play in the future has been somewhat exaggerated. It would be imprudent to envisage it as a wonderland, [Illustration here] an eldorado destined to a great future from the administrative, commercial and sanitary point of view. Today it is a plateau with well-cultivated slopes which yield fine harvests of cardamom and rice, as well as tobacco, cotton and Chinese nettles [ortie de Chine], and is inhabited by gentle, peaceful folk who live in handsome, well kept-up villages. 133 241 361

of the Moun (1).

000

(1) See table, Chapter VIII.

The most difficult rapid to negotiate is the Keng-Tanah, situated only three kilometers from Pak-Moun. During the low water period it is necessary to unload them completely and transport them by hand across dry land over extremely rough sandstone rocks. It has been negotiated during the high water period by the single-wheeler the Haiphong, and since the current beyond the rapids is weak and the width sufficient (300 meters), steam navigation is possible as far as Oubône for perhaps two or three months.

505 133

Francis Garnier describes this region as follows (2):

(2) Francis Garnier, op. cit. [Voyage d'exploration en Indo-Chine, 1885.]

"From Pi-Moun on the river is once more unobstructed. A very weak current, straight banks and a uniform width give it, in certain spots, the appearance of a canal dug by man."

At Pak-Sédone the Mékong is joined on its left bank by another important tributary, the Sédone. This river, which is about 200 kilometers in length, rounds the northern part of the plateau of the Bolovens. All the roads which descend from this mountain mass end in its valley, and all the products of the region leave it by way of the Sédone. Cardamom, which is the most important of these, is [94] an item much dealt in at the temporary market of Champi. The latter is the terminus of the convoys which come down from the plateau, and from this point on merchandise goes by river to Bassac or Oubône.

438 361 241.

The market of Champi had to be established fairly near the mouth of the Sédone, for just upriver and less than thirty kilometers from Pak-Sédone the river is barred by insurmountable waterfalls [Illustration here] fifteen meters in height. From the point of view of navigation the Sédone is therefore divided into two sections: the part situated above the falls and the part situated below.

505 133

To the north of the falls the Sédone has a reach some thirty kilometers in length which can be navigated in all seasons by pirogues

23: Franck--333 T-2 (1924) 1926 Laotians
116, 241, 311 Ethnic subgroup

"Here and there patches of hillsides, even of mountain-sides, were being or had recently been cleared in this primitive way and were now more or less velvety-brown and strewn with fallen charred trees. For like the Miao the Kha still burn a new strip of forest whenever they wish to plant, cutting down mammoth trees just to clear the way, and leaving them to rot. What the coffin-makers of China would not have given for some of them! But I saw nothing planted, perhaps because the end of April is too early in these highlands, as in the grass-grown rice-fields we came upon lower down. Every now and then a tiny hut as bright as if it had been made of new straw stood forth in the middle of a recent clearing, the sleeping-place evidently of a pioneer husbandman too far from home to commute. Upland rice, needing no flooding, and other jungle products are grown by the Kha and the other hill people, and sometimes carried to Luang Prabang itself, though most of them merely grow enough to feed themselves."

34: Thompson--174[3] J-4 (no date)1947 Laotians
116, 241, 423

"In Laos, where there has always been plenty of unoccupied arable land, every type of ownership may be found--family possession and cultivation, communal lands, and shifting agriculture."

35: Ennis--130 H-3 (no date) 1936 Laotians
116, 241, 311, 464, 496

"The colonization schemes sponsored by the Indochinese government in other parts of the peninsula have not touched Laos. The local administration, however, has been encouraging small-scale settlements. The Société de l'Houle Pakhout has placed 12,000 coffee plants upon the plateau of Boloven, and in the same region a group of natives has set out 100 hectares of kapotiers. The colonization of Laos cannot be initiated until the railroad from Tanap to Thaklek is completed, which will link up the interior to river nagivation [sic] upon the Mékong. Here, as elsewhere, one of the chief problems is inadequate labor supply. (58)

58. Rapports au grand conseil, pp. 85 ff."

132 and accompanied or preceded by hurricanes, cyclones and even tornadoes, sudden showers, hail, etc.

The first manifestations of the rainy season occur in April after a period of two months during which great dry, hot winds blow which [241] make respiration difficult. Clearing mountain land and burning the stubble in the ricefields further increase the natural heat of the atmosphere, for it is at this time that the stubble is burned in order to obtain soda with which to fertilize the next crop.

The first storms are preceded by high electrical tensions which light up the horizon, but without thunder. Then when the clouds break the water of the first storms comes down in veritable sheets. The earth, which has become hardened and cracked for nearly a meter below the surface, [109] begins to steam. It absorbs instantly, so to speak, and without leaving any traces thereof, the enormous quantity of water which pours down, exuding an odor sui generis and freeing clouds of mosquitoes, myriads of febriferous microbes and other infectious bacillae.

When the rain stops between two storms the purified atmosphere becomes light and diaphanous. The electrical tension disappears, the air is saturated with ozone and the temperature falls several degrees. The refreshed leaves absorb carbon dioxide more easily from the air and consequently give off more oxygen, and men as well as animals, panting and oppressed a few moments before by the heavy heat, enjoy the happy effects of the rain.

During this period the temperature rises at night and people begin to rid their beds of the blankets which had been necessary ever since December.

Depending on the altitude, the latitude and the disposition of the terrain, the variations in temperature for the two parts of Laos from March to May are as follows:

1. Northern Laos:
   (a) Valleys and Low Plains
   Morning..... 20° to 22°
   Noon..... 25° to 30°
   Afternoon..... 15° to 25°
   Night..... 15° to 20°
   (b) Plateaus and High Valleys
   Morning..... 15° to 17°
   Noon..... 20° to 25°
   Afternoon..... 10° to 15°
   Night..... 10° to 12°

[114] of what has been observed, and because no better expression of the facts could be hoped for.

THE THAI RACE

142 144 "Laotians. Of all the Thais, the Laotian is the one who has remained the purest, although he has a much higher proportion of Aryan blood than the other varieties, with the exception of the Lus. Fairly tall in stature, his hair cut short, elegant in his movements and more refined than all the other inhabitants of the land, he is the aristocratic type of Laos. His upbringing, his education, his religion and even his vices have a mark of distinction which make 438 them stand out above those of his neighbors. An excellent boatman, and a trader rather than a farmer, he is the one who seems the master 505 of the land, as much by virtue of his commercial aptitudes as by the 484 ease with which he ranges the country. Mounted on his long and narrow shaped pirogue, made in one piece of a tree trunk hollowed out by fire, he goes great distances to visit peoples of the most varied races [175] [Illustration] [176] [Blank page] [177] and serves as a link between all the human varieties which populate Laos. He is at home and at his ease everywhere, standing out clearly above all his countrymen in this respect.

[361] "The Laotian prefers to settle along navigable watercourses and in proximity to plains of ricefields. He is glad to have his land [241] worked by mercenaries or by dependents of inferior race, and some- [567] times by slaves (at least before our arrival). He himself, with quite an extensive knowledge of the needs and resources of the other inhabitants of the land, particularly likes to traffic in all kinds of merchandise. He it is who goes to buy forest products and cereal grains on the spot from the mountainfolk or from sedentary farmers, and sells them cloth, salt, tobacco, earthenware, farming implement [439] etc. in exchange. He it is who exports the products of Laos to neighboring countries and brings back the things which Laotian industry cannot produce. His business as a commercial traveler, which he likes and which gives him a good standard of living, occupies him for only a few months of the year but brings him into contact with all the neighboring peoples and also with the Europeans and Chinese in the Siamese, Annamite and Cochinchinese trading posts. Thence arises his veneer of civilization which strikes one at first glance.

301
306
[563]

who work gold mines--and by the inhabitants of several regions, whose state of fortune would nevertheless enable them to use a more precious metal.

Jewelry and examples of the goldsmith's art are found in different forms and types which vary greatly with the region and race, as will be seen by the nomenclature given in Chapter IX.

262

Food. The Laotian scorns the pleasures of the table, and is generally a moderate eater and drinker. Steam-cooked glutinous rice forms the basis of his food supply. To this he adds salt, peppers, various other spices, fresh or preserved fish, etc. Besides these, but less frequently, his day-to-day diet may be varied with poultry, eggs, buffalo meat, beef and pork, as well as venison. To be sure, it is mainly on the occasion of public or private festivals, which are fairly numerous in the course of the year, that the Laotian improves on his usual rather frugal fare in this way.

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273

The customary beverage is water which may be taken directly from the rivers or first be hastily decanted into jars or water-coolers of porous earthenware. In general, Laotians prefer water taken directly from the river to that which has been filtered. Finally, the people of Laos consume rice brandy which is obtained by distillation, and a kind of beer made by cold fermentation of rice mixed with paddy husks.

[527]

The use of these drinks, aside from rare exceptions, is reserved for holidays.

152

Physical appearance, character, occupations. The Laotian's character is, in general, mild, friendly and happy. His physiognomy is [181] open and smiling. Not quarrelsome by nature, he even shrinks from coming to blows in extreme cases and prefers to end a dispute with an outburst of laughter rather than with blows.

Since, all in all, it has few needs and inhabits a land with luxuriant vegetation which is abundantly favored with products to be had for the scavenging, this happy people can easily satisfy its needs and be content with its fate. [Illustration alongside text here.]

461

It is assuredly lazy, but out of indifference much rather than out of any deliberate intent. It cannot grasp the advantage or utility of a regular and prolonged effort beyond what is strictly necessary to provide it with a living and a few distractions to which, in reality, its own joyous disposition makes the greatest contribution.

462

To the men are reserved the chief tasks, which have a more virile and noble character than those which are the women's lot.

241

462 Tilling the ricefields, hunting, fishing and managing rafts and pirogues take up about six months of the year. The rest of the time 241 they rest and enjoy themselves. The status of women in Laos, although not as low and painful as that of other women of Asiatic races, is nevertheless not as pleasant as that of their husbands. In fact, all the petty farming tasks fall on them. They perform all the household labors, care for the poultry yard and the livestock, etc. They do the cooking, decorticate the paddy, go and fetch wood and water, spin, weave and dye cotton and silk, take care of the children, etc. Less [182] fortunate than her husband, the Laotian woman has no leisure except on holidays, and even then she has to make all the preparations without letting her daily occupations suffer.

142 Of ordinary height, generally well made and even elegant of figure, the Laotian woman has a friendly face and is not without 562 either grace or coquetry before her marriage. This does not mean that there are no homely girls, but these are rather an exception. As she grows older and worn from bearing children the Laotian woman loses much of her early grace, but in spite of everything she retains her joyousness, her high spirits and her very pronounced taste for celebrations when there is singing and feasting.

862 Laotian mothers worship their children. They take great care of them and often push their weakness for their children to such a 858 point as to prolong the period of breast-feeding, often beyond the child's fourth year.

342 Dwellings. Like all the representatives of the Thai family, the Laotians inhabit houses which are rectangular in shape and are always 574 raised one or two meters above the ground on piles. Wood and bamboo, in the form of beams, framing members, rafters, door and window casings, partitions, doors, windows, floors and shingles, are used to build houses, without the use of any nails, all joints and assemblies being fastened together with rattan.

The dimensions of the houses vary greatly and depend on the number of families that they are designed to shelter. Verandas with roofs which are sharply inclined and come down quite low are placed around the house, mainly on the south and west, to temper the heat of the sun and serve as a vestibule, a reception hall or a workshop. The family stays there during the day, as on a sort of neutral ground where people who are coming and going can be received without transgressing custom, which decrees that no one except members of the family and close friends shall have access to the inner apartments, which form the private home of the house's inhabitants.

181 bread by their work, they have scarcely a care for the morrow.
461 Scrupulous observers of the traditions handed down to them by their ancestors, they live an utterly carefree life and instinctively dread everything foreign or unknown to them.

463 Occupations. The men busy themselves with the tasks of farming,
241 fishing and hunting. They are very industrious and skilled farmers,
462 and can draw admirably on the soil's resources. They bring in the water needed for irrigating their rais or mountain ricefields through ingenious canals built along the sides of hills, and they also know how to capture springs, often very distant ones, for the same purpose. To decorticate paddy, they use mills driven by artificial waterfalls. The women perform the household chores, take care of the children, make and mend clothes, harvest and spin cotton, breed silkworms, unwind the cocoons and mill the silk. Theirs also is the task of supplying the home with water and with wood which they gather in the forest, as well as sowing, transplanting, weeding, harvesting, getting in and decorticating the rice. These many tasks leave Thai women and girls little leisure, and it would thus seem only natural that they should profit by a moment of pleasure, whenever one presents itself in the midst of their multiple duties. They do, in fact, go in for fun eagerly and behave as keenly, despite their more reserved appearance, as their Laotian sisters.

361 Houses. There is no difference between Laotian villages and Thai villages, except that the latter are better kept and cleaner.

342 Thai houses are generally longer and higher than those of the
592 Laotians, by reason of the custom which decrees that the whole family--parents, children and grandchildren--shall live under the same roof. Some Thai houses are as much as thirty meters long and from eight to ten meters wide. In rare cases one finds much larger houses which are from seventy to seventy-five meters long and twenty-five meters wide.

342 Thai houses very often have no verandas on their long sides, but
554 always have two, one at each end, which are covered by rounded roofs and serve as reception terraces or antichambers.

The houses of mandarins and notables can be distinguished from the others by the fact that the roof rafters and the trusses of the gables extend above the line of the roof and cross. These members are decorated with wooden silhouettes or scallops ending in discs which, depending on their number and arrangement, indicate the rank of the house's owner.

Hill Tribes

595 There is polygamy among the Meos, and the Meo women do not enjoy any higher regard than the Kha women.

[101] The Yaos. The Yaos have the same origin as the Meos, and are strikingly like them in many respects. Their mores, their beliefs and their habits are identical.

619 As we have seen above, the Yaos are divided into three varieties, these being the Lantenes, the Khao and the Ao-Tchaine.

291 The Lantenes (blacks) wear broad trousers, a long smock buttoning
302 at the side and a turban, all made of black cottonstuff. They wear their hair long and either wound under a turban or braided in Chinese style.

[342] Their houses are like those of the Meos and shelter several families, each of which has its own quarters. They are generally clean and well kept-up.

593 The mores of the Lantene Yaos are patriarchal, and these folk
562 are monogamous. The women are very reserved and do not let themselves be seen much by strangers. They enjoy a certain respect and are treated with consideration by their husbands.

231 The Lantenes are great livestock breeders, and cultivate the opium
241 poppy in addition to rice and maize. They are skilled hunters of wild animals, and each man owns a rifle from which he is rarely separated.

224 Besides a dialect peculiar to them, they speak Quoan-hoa (a
[212] Cantonese idiom), and many of them can write Chinese characters.
[198] The Khao Yaos are less outgoing than their fellows and do not
101 greet strangers with as much good will.

291 The men's clothing is like that of the Lantenes, [269] but the women are garbed in a different manner and wear their hair in a special way which has earned their tribe the name "Khao" (horns).

Over a pair of black trousers ornamented with colored embroidery and held in place by leggings, Khao Yao women wear a tunic which comes down to the knees but the flaps of which are fastened to the belt. This tunic also has colored embroidery on the chest, back, neck and cuffs, and is held shut with wide silver hooks.

302 Their hairdress consists of a coil which is smeared with wax and lacquer to hold it in place and in which a wooden socket is imbedded. A light bamboo framework is inserted into the socket, and over this is spread a red cloth or a black cloth embroidered in red. The women thus appear to have two horns on their head.

301 Silver jewelry, neckbands, bracelets and ear pendants are worn by the Khao Yaos.

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The trees also support incomparable wild orchids with strange flowers, and climbing or twining plants of every possible shape and color which are as graceful as they are delicate, which cross, intertwine and with their lianas form an inextricable jungle, a curtain of flowers, stems and foliage which moves at the whim of the winds and is so thick in certain spots that it casts an almost perpetual shadow (1).

(1) The exact nomenclature of these floral species is almost impossible to establish. We shall content ourselves with noting, among many others which are still unknown, the acacia, and principally the farnèse acacia; various kinds of lilacs; the double and single hibiscus, the African marigold and the zinnias, the lotus, the cockscomb, the marvel of Peru, the sunflower, several kinds of magnolias, syringa, camellias, etc.

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Various plants used for food, medicine and dye also grow in the forests, such as yams, taros, ginger, cardamom, annatto, curcuma, catechu (sisièt), Campeachy wood, wild indigo, etc., as well as trees and lianas which produce resins, oil lac, black and red lacquer, damarine (huile de bois), benzoin, wax, gums and rubber.

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Rice and maize are cultivated on the plateaus, low hills, mountainsides and in the valleys, as well as on the alluvial deposits of the Mekong. These form the basis of the natives' food supply and are essential elements in the manufacture of alcohol.

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The banks of the watercourses, which are covered by inundations every year and constantly fertilized by alluvial deposits, are [305] used for the cultivation of cotton, tobacco, indigo, castor oil plants, batatas, peanuts, manioc and vegetables and fruits such as onions, garlic, tomatoes, squash, melons, fennel, mustard, edible convolvuluses, sensitive d'eau, etc. In the gardens which are cultivated near the banks one also finds sugar cane, coconut palms, sugar palms, betel palms, latania palms, the poivrier bétel, the arborescent mulberry, peppers, coriander, mint, the citronella and [Illustration here] purslane. Here also are a large variety of fruit trees; banana trees (more than twenty-four varieties), cinnamon trees, fig trees, orange trees, tangerine trees, grapefruit trees, lemon trees, lime trees, pineapple trees, pomegranate trees, guava trees, mango trees, papaw trees, ebony trees (Diospyros ebenum), mangosteen trees, jack trees, durian trees, custard-apple trees, avocado trees, litchi trees, sapodilla trees (red balata), fayolliers (légumineuses), silk-cotton trees

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245 (bombax and callotropis), tamarind trees, jujube trees, cucumber trees, water chestnuts, etc.

In the north of Laos grow peach trees, plum trees, almond trees, [306] walnut trees, cherry trees, apple trees, pear trees, strawberry plants and medlar trees, the fruits of which are similar in taste to that of their counterparts in Europe, although they are neither as large nor as succulent as the latter.

On the edges of the forest, and sometimes even in the middle, there are also other wild fruit trees reminiscent of the plum tree, the cherry tree, the apple tree (a rose-apple tree with red or green fruits), the fig tree, the quince tree, etc. Their fruits have remained in a wild state or reverted to one because of a lack of adequate care, and are not edible. Their seeds, pits and stones have developed excessively, to the detriment of the pulp which remains tough, bitter or tasteless.

248 Finally, opium poppies, tea, ramie, hemp, etc. are cultivated
249 on the plateaus and in the high valleys.

Most European vegetables grow in Laos, in the gardens of the
241 Europeans. They are seeded at the end of the rainy season. Early varieties can be harvested and a new crop seeded well into July, but care must be taken to cover the beds during downpours, which occur frequently from May on.

The forests of Laos may have two characteristic forms, depending
134 on whether the soil is mountainous and composed of clay or limestone,
137 or else flat or slightly sloped and sandy, rocky or stony. In the first case the soil has a high percentage of vegetable matter, is moist and rich in humus and consequently covered with thick forests (Dong or Pa). In the second case it has a low percentage of vegetable matter, is hot and poor in humus and is covered with light forestation (Khok or Pa-hang).

A table contained in the Appendices (No. XX) gives the nomenclature of some sixty varieties of trees on which we have information. In addition to the trees which we cite, we should also note the bamboos, rattans and banana trees.

There are some twenty varieties of bamboo, in which the stalks vary from the size of the little finger to as much as thirty or even thirty-five centimeters in diameter. They sometimes reach a height
824 of twenty meters. There are six or seven varieties of rattan of different grades and sizes, but they are used only for local needs. Among the many wild banana trees, a few varieties such as the "Kok-Koue-Kene" yield a sort of fiber rather like abaca.

137 [307] Although we are able today to evaluate the forest wealth of Laos approximately and to compute its immense commercial value,

Se-Bang-Fai. But studies are not yet sufficiently advanced for us to be able to give any useful information. 316

We have nevertheless felt that we should mention these deposits, in order to establish the importance of all this part of Laos from the point of view of mineral wealth.

[327] [Illustration at top of page]

CHAPTER VII

I

SCAVENGING

We have seen that the inhabitants of Laos are apathetic and little 461 inclined to work. They nevertheless find, although they go to scarcely any trouble, enough to supply their needs easily. 241

Indeed, with the exception of a few annual crops such as tobacco, cotton and indigo which are grown on the ever-renewed alluvia of the watercourses, the production of rice and of maize are the only occupations which require--and even then during a relatively short time--any degree of work or perseverance. We may mention the [249] opium poppy, ramie, hemp and the mulberry tree merely as a reminder, for only a small part of the population devotes its time to these crops, which are still not at all extensive.

Yet, it may be objected, the native has an easy life, dresses 511 adequately, [328] lives in a house which is solid and comfortable from his point of view, has various tools and utensils, weapons, and sometimes even valuable cloth goods, jewels, etc. He spends money for celebrations and for offerings to the bonzes and pagodas. He pays taxes, he supports court costs which are often large with respect to the question at issue, and he is subject to the exactions of his mandarins to a greater or less degree. Finally, the commercial transactions of Laos involve quantities and sums which are quite high in [438] comparison to the sparse population.

How are we to reconcile all these factors, and how is it that the Laotian, who produces so little with his labor, nevertheless has all he needs to get along on?

This is due to the fact that Laos is above all else a scavenging 314 country.

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386 when mixed with curcuma. The trees are found in the forest, and sometimes in gardens.

10. Yams.

262 The yam is an edible tubercle of the Dioscorea family. It is represented by two varieties, the white and the black, which are called
●241 "Mane-Phuek-Khao" and "Mane-Phuek-Dam" in Laotian. These tubercles are the main standby when there is a scarcity of rice and [335] maize, but in ordinary times they are used only to supplement the usual diet.

11. Taro or cush-cush (Mane-Pa).

Taro is also a food plant of the Aroïdées caladiées genus (Caladium esculentum). Like the yam, it is one of the most useful edible tubercles in times of famine.

12. Medicinal plants.

824 Designated by the generic name "Ya" in Laotian, these plants are represented by special types of orchids, roots, bark, berries,
278 leaves and even pieces of wood of different kinds, the whole forming an assortment of medicaments.

[438] The Khas are the ones who collect these various products from the depths of the forests, and they trade them either to Chinese or to Laotians for money or other goods.

[435] Certain of these plants and barks are used by the Laotians while others, such as the leaves from orchid plants, for example, are purchased by Chinese merchants at prices which vary between 33 and 62 francs per hundred kilograms.

13. Cloves.

The clove tree (Caryophyllus aromaticus. Kane-Phou in Laotian) is quite scarce in Laos. Cloves are mixed with various ingredients in masticatories or are taken as medicine.

Cultivation of the clove tree ought to be developed in Laos because of the high value of its flowers which, when dried on the tree, constitute the cloves of commerce.

14. Beeswax (Phung).

222 Beeswax is much sought-after in Laos, where a great deal of it is
[231] consumed. It is a scavenging product par excellence since, except in the Sib-Song-Pahn-Na, the inhabitants do not practice apiculture and
314 are content to go into the forest and look for honeycombs in order to extract the wax. The latter is used for domestic needs and for worship
[438] ceremonies. It also forms the basis of quite an important trade.

"Pa-Niang," formed of slices from a large fish which have been smoked. 226

"Pa-Heng," or a small dried fish. 262

"Pa-Khem" corresponds fairly closely to our salted and dried fish of the sardine type known as Nantes, which are left in salt for only a few days.

Finally, "Pa-Dek" is the form in which most of the large varieties of fish are preserved, and is an almost indispensable part of the native food supply. To prepare Pa-Dek the meat is cut into small pieces and ground in a mortar with salt and pepper so as to produce a kind of paste which is then put in jars with salt. The resulting brine helps to preserve the product (1). 263

(1) The price of Pa-Dek varies between 18 and 25 francs per hundred kilograms. This is the "Mam" of the Annamites.

The price of fish is subject to fluctuations, depending on the scarcity of it. The large fish of which we have just been speaking sell at prices between one and forty francs, depending on their weight and their abundance on the market. 226 435

Eels, shrimp of the prawn type and crabs are also found in the ponds and rivers of Laos during the rainy season, and in the water-courses there are various edible shellfish [353] such as the river mussel and small winkle. The ponds and swamps shelter several varieties of frogs, some of which reach an enormous size. All of them are edible, and are caught with a red ribbon on the end of a line fastened to a long bamboo pole. 226 [227]

II

PRESENT-DAY CROPS

Together with an enumeration of the crops grown in Laos we should like to be able to give the area which each occupies and the cultivable surfaces with the nature of the soil and the type of crops which would be suited to them, but as the Superior Resident states in his report for 1899: 241 311

"We have been in the colony for too short a time to have been able to set up a cadastral registry service. In view of the large area of the territory (267,000 square kilometers), the small and sparse population which inhabits it (2,7 inhabitants per square kilometer in

241 Lower Laos and 1.1 inhabitant in Upper Laos), the considerable expense
311 which the establishment of a registry would involve, and the slight interest attached to such a measure in a land where our advantage lies in exercising only an indirect administration, it is impossible for me to reply in any precise fashion.

"All that I can say is that the area of cultivable land is about 80,000 square kilometers, and that it is very unevenly distributed.
[312] The southern part of the possession does offer a certain number of vast plains which are well irrigated or can be irrigated and which are admirably suited to agriculture.

"The northern part, on the other hand, is almost exclusively made up of a series of juxtaposed mountain masses in a nearly unbroken line which leaves only an insignificant place for the rare valleys and plateaus satisfying the conditions required by agriculture.

"The area of cultivated land may be estimated arbitrarily at 30,000 square kilometers, distributed as follows:

Southern Laos, 20,000 square kilometers.
Northern Laos, 10,000 square kilometers.
} Giving about 15 inhabitants per cultivated square kilometer."

In the preceding chapter we gave a list of the plants which compose the flora of Laos. We shall supplement it here by studying those which are grown as regular crops.

243 RICE. Rice, being the basic food of the Laotians, occupies first place among the country's crops.

Two varieties of rice are grown in Laos, glutinous rice or "Nep" (in Annamite) which is called "Khao-Niaou" in Laotian; and dry rice or "Khao-Tiao" which is known in trade as Cochinchina white rice.

The first is more nourishing and contains a higher percentage of starchy matter. Because of its particular qualities, it is the type most widely cultivated for food and for the manufacture of alcohol.

Dry rice or "Khao-Tiao" is also cultivated, but in smaller quantities. It is primarily used for making pastry and for food by inhabitants of certain races which do not eat glutinous rice.

[554 Persons of a certain standing even go so far as to eat only "Khao-
262] Tiao" out of ostentation.

Glutinous rice is grown in plains ricefields as well as in terraced ricefields on hillsides and in "Rais" or temporary clearings in the mountains.

248 There are three harvests each year. In the first the shoots are .9 meter high, in the second 1.4 meters and in the third 1.6 meters. They yield, respectively, for an area of 14 square meters, 18, 20 and 24 kilograms of fiber.

At harvest time the shrub is split and left to soak in water for three hours, for the fiber is difficult to tear off. The work of decortication takes a long time, and this drawback has so far prevented the cultivation of this crop from spreading although it is an easy one on the whole and not at all exhausting for the soil, since it is possible to grow it twenty years in succession on the same plot of ground.

438 Exports from the provinces of southern Laos were more than fifty
248 tons in 1899. A great deal is used locally, since all the nets used for hunting and fishing are made with this fiber.

Prices are as follows (1):

248 (1) In view of the price at Bassac (37 francs), it would be ad-
435 vantageous to export this product to Cambodia, where it sells for twice as much.

	Per hundred kilograms
Plateau of the Bolovens	25 to 35 francs
Bassac	37 "
Saravane	60 "
Khong	60 to 80 "
Attopeu	30 "
Stung-Treng	54 to 62 "
Pnom-Penh	60 to 80 "

248 [367] HEMP. Hemp is grown in Upper Laos, but only for local consumption. It is used in making string, light rope, nets, etc. A very strong and fairly good-tasting alcohol is also extracted from its seeds. It is called "Pane" or "Nhia-Pane."

241 BATATAS. Various kinds of batatas which are more or less sweet
[262 are grown each year on the banks of the watercourses and in the still
23] moist sandy alluvia. These tubercles are chiefly consumed by the inhabitants, although small quantities are used to fatten certain animals, particularly pigs. The large variety of batata which is round and not very sweet is called "Mane-Phao" and the one which is elongated and sweeter is called "Mane-Keo."

incorporate into the teas which they send abroad. But they appeal to the Chinese and other Orientals, and part of the crop is even set aside and sent as tribute to the court of the Emperor in Peking.

The Shans, the Lus and the Youns use a masticatory called "Mieng" which is composed solely of tea leaves which have been preserved in brine.

PIMENTOS. Since pimento is a much sought-after condiment, and one which is even indispensable to the people of Laos, as to those of neighboring countries, the cultivation of this product is quite widespread.

This pimento is of the large, red variety. It is prepared by [378] drying and smoking it, thereby guaranteeing that it will keep. Its name in Laotian is "Mak-Phik." The price of dry pimento varies from 25 to 37 francs per hundred kilograms.

FARMING IMPLEMENTS AND TOOLS USED IN LAOS. We shall conclude this rapid listing of the chief crops grown in Laos by giving a list of the farming implements used in the country. These latter are just as primitive and just as rudimentary as the farming methods, and the Laotians do not make any more effort to improve the ones than to improve the others.

The plow (Thai). The plow is extremely simple and is the primitive swing-plow formed of a single piece of bent wood. A share or "Mak-Sob-Thai" is fitted to its front end. Sometimes the share is even supplanted by cutting the stick of wood diagonally and hardening it in a fire. Drawn by a buffalo, this tiny plow cannot break the soil to any great depth, and so is used in ricefields only when the soil has been sufficiently softened by the annual inundations.

The harrow (Khat). The harrow is a sort of wooden rake .9 meter long, the teeth of which are made of ironwood or any other very hard wood, "Mai-Lek" or "Mai-Khen-Hine." This rake forms one of the sides of a triangle, the peak of which is harnessed to a buffalo.

The roller (Ham). The roller is the trunk of some hardwood tree, "Mai-Khen-Hine" for example. It has pins over which two shafts fit, leaving space to harness a buffalo.

The sickle. There are sickles of several sizes, which are called either "Kio" or "Lek Kio" without distinction. Sickles are used to cut grasses and rice.

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The spade. Two kinds of spades are used. These are called "Siem" (this is more of a scoop) and "Tiok-Kout-Dine" or, literally, Pick for breaking ground. The first is formed by a narrow iron blade which is slightly concave lengthwise and is provided with a socket into which a handle is fastened. The second is made of wood, and the blade and handle are in one piece. The lower part is fixed into an iron frame which also binds both sides [379] [Illustration] [380] [Blank page] [381] for about two-thirds of their height. The spade is used to make holes and to turn over the soil.

The machete. The machete [coupe-coupe] or felling sword which is used for heavy work is called "Pha." It is composed of a solid, broad and rather short iron blade with a thick back which is fitted into a wooden hilt with an iron ferrule.

Another kind of knife, called "Mit-Tok" or "Mit-Noi," has a blade which is narrower but longer than the above. This tool is used for fine work, such as cutting and splitting bamboo, rattan, etc.

The ax (Khouane-Hone, Khouane-Mou, or Khouane-Bong, "hatchet"). The ax is formed of a narrow, two-edged and rather short blade. A hardwood shank .6 to .7 meter long is fitted into the head. This shank itself is held by wedges, a third of the way along its length and slightly above the blade, in a mortise which crosses the end of a handle .6 to .7 meter long. The ax is used to cut trees, to hew posts and planks, etc.

It is at the very least odd to note that, except the blade which is a modern innovation, this ax is similar in every respect to the kind used during the age of polished stone.

The other tools used are: the hammer or "Khone-Lek," the saw or "Lueui," the file or "Lek-Sambai," the wood chisel or "Siou," the awl or "Lek-Si," the pincers or "Kab-Lek," the anvil or "Thang-Ti-Lek," and finally the bellows or "Soub."

CROPS TO BE ENCOURAGED

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Most of the crops which are now grown in Laos can be improved and developed, and this must be done if we are either to increase exports of farming products or to provide more well-being for the inhabitants.

In a general way, the administration can perform a useful task by increasing the number of experimental farms, by distributing [382]

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selected seed to the natives, and by giving them advice and, if necessary, orders.

The reader will doubtless be struck by the fact that we shall often reiterate, in speaking of the crops which should be encouraged or introduced, that the administration's role should be to make trials of such and such a plant. This is nevertheless the case. It must not be imagined that individual initiative will suffice, for the comparatively large capital investment which any agricultural enterprise requires will not be made until after any given crop has proved to be successful. It is therefore incumbent on the administration to make these first trials. Was it not the Government which set up the first plantations of tea in Assam, of cinchona in Java, and of tobacco and coffee in Sumatra? The colonists did not come until later, when the period of groping and failure was over, and they were then able to act with assurance almost everywhere.

Rice. The cultivation of glutinous rice should most particularly be developed in southern Laos, with a view towards the manufacture of alcohol.

We have seen above how small a proportion of the cultivable land has heretofore been utilized. Much land suitable for making ricefields has not yet been cleared. In spite of the remunerative price offered them for the produce of the soil, and in spite of the encouragement which they have received from all quarters, the natives do not yet understand all the advantages which they would gain from developing their crops. It is nevertheless easy to see that since our arrival in Laos the inhabitants have realized that the regime of terror and exactions has disappeared and that an era of prosperity and justice is opening up before them, and they are increasingly devoting themselves to the work of the fields. Ricefields have appreciably increased in extent, either because new land has been cleared or because abandoned fields have been brought back under cultivation.

Glutinous rice is assured of a certain and profitable sale on the markets of Cambodia and Cochinchina (1). It may be anticipated

(1) At the present time, with the existing means of transport, exporting rice from Bassac to Pnom-Penh yields an average net profit of 13 francs per ton.

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that if rice production were to increase and continue to progress, distilleries and starch factories might be established in Laos [383] to utilize the high proportion of starch which rice contains.

The cultivation of maize should also be encouraged with a view to the same end.

Tobacco. It is to be desired that the manufacturers who deal in tobaccos should become aware of the very real qualities of those of Vien-Tiane and Nong-Khay. Persons or corporations who prospected this region would immediately find, in the cultivation of tobacco and its direct marketing, resources which would greatly reduce the cost of their explorations.

There is also room for one or several Europeans who would engage in tobacco farming on a share-cropping basis, allowing natives to cultivate it in the beginning and prepare it in their own way, until it has been made into plugs. Then later on they might experiment with seed from Havana and the Philippines, and attempt industrial fermentation. Without making any advance judgment as to the eventual results of these improvements, it may yet be said that this crop would yield rewarding profits, since prices in the region of production vary between 50 and 100 francs per hundred kilograms, whereas they are as high as 125 to 187 francs in Bangkok.

Whatever the case may be, the cultivation of tobacco may be extended, since there is no shortage of suitable land. It is also capable of improvement, for production would certainly double if the natives used fertilizers less parsimoniously.

Cotton. We have noted that the existing species are all of the short staple variety and all have a low yield. Plantings of a long staple variety have been made in the experimental garden of Luang-Prabang, and have given satisfactory results. The Superior Commandant of Upper Laos reported the experiment as follows:

"Trials were made with seed from the botanical garden of Hanoi.

"The minimum height of the plants was one meter and a few, those from Virginia, reached heights as great as 2.5 meters.

"The bolls were as large as chicken eggs, whereas those of the native cotton plants [384] were at best as large as pigeon eggs, and their average number was 400 per plant.

"As regards the quality of the textile material, it is unquestionably superior to that of all the cotton heretofore harvested in the country.

149: Reinach--281 G-3 (no date) 1901 AM1 Indochina
Laotians AM8

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"These results are extremely encouraging for the future, and there is every reason to believe that if undertaken on a large scale and in accordance with the most improved methods, the cultivation of cotton could within a short time become an important source of revenue" (1).

(1) Bulletin économique de l'Indo-Chine, 1899.

This report is correct, and yet one should not think that if the natives are left to their own devices they will take any care to secure cotton seed of an improved variety or modify their farming methods.

The administration must step in and furnish this new seed to the population, and force it to cultivate the seed in accordance with the better methods.

Such intervention on the part of the administration will come as no surprise to those who are acquainted with the carefree ways of natives of all races in Laos, and their scant eagerness to give up their old routines, even when they are being asked to adopt some measure of unquestioned utility. In proof of this fact we need merely cite the difficulties encountered and the unwillingness which had to be overcome when rice storehouses were set up in each village, even though these were designed to save the inhabitants from famine.

A further example may be cited in this connection, showing that in certain cases firmness is not to be eschewed. The crop of cotton is one of the chief products of Russian Turkestan but, as is the case in Laos, the cotton being grown in the country when the Russians arrived was of the short staple and low yield variety.

The administration first tried to increase production in the country by distributing seed from Georgia cotton and by giving advice on its cultivation.

All to no avail, for it came up against the routinism, the indifferenc and the fatalistic spirit of the population. Then it acted by order, almost manu militari, and obtained amazing results, such that a section of railroad which had been constructed as a strategic line, [385] that is to say with no hope of commercial traffic, is now employed in transporting cotton. The yield from the crop is fivefold, it would seem, and prices have doubled.

The creation of the cotton farm of Tachkent has had similar results. [Illustration here]

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Sugar cane. The production of sugar cane, which is still not very significant in Laos, deserves to be encouraged. Later on when this crop had been developed, the Laotians might be trained in the methods of the first stage of refinement. They would then be able to produce gray muscovado and sugar candy, which are easily exportable.

Southern Laos is the part of our possession which would lend itself [386] best to the extension of this crop. Although of secondary importance, it is nonetheless deserving of attention.

Benzoin trees. Increasing the number of trees which are producers of this precious resin is again a task for the administration. After a serious study of the conditions of growth of the plant in Laos, of its habitat and of the nature of the terrain best suited to it, it would be possible to set up seed gardens designed to supply young plants either to the natives or to Europeans who settled in the country and were interested in this crop. It yields a rich product, which brings a high price on the market. Benzoin is, in fact, widely used in perfumes and in the manufacture of varnishes.

Lac trees. All who are acquainted with Laos are unanimous in agreeing that increasing the production of sticklac is one of the main factors in increasing the country's wealth. What, indeed, could be more simple, thanks to the easy and rapid multiplication of the "Kok-Toua-He," the tree which grows almost without care and lends itself so well to the establishment of colonies of coccus lacca, the producers of a superior quality of gum lac?

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Cardamom. It would seem that experiments with growing true cardamom, as it is grown in Cambodia in the province of Pursat, might be attempted in Laos. The natives would have everything to gain from giving up the cultivation of wild cardamom for that of true cardamom, since the latter brings from five to ten times more than the former on the market of Pnom-Penh.

Until such time as this precious seed is introduced into Laos, it will be well to extend and encourage the cultivation of the present variety of cardamom. All those who have engaged in the production and commerce of this seed (1)--the mountainfolk who grow it, the

(1) It is much sought-after by the Chinese, who use it as a condiment as well as in pharmaceutical preparations.

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CROPS TO BE INTRODUCED

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Here is a list of some crops which, among others, might profitably be introduced into Laos.

Manioc and sorghum. Trials successfully carried out, particularly in Muong-Son, prove that these plants can be grown there on a large scale.

Abaca. In Laos there are several varieties of musa which grow wild and whose fiber is used in the country for making various kinds of string and cord, tow for caulking pirogues, etc. These trees are the "Kok-Kouey-Ken" or seed banana, and the "Kok-Kouey-Pa" or forest banana. They are found on the lowest slopes of hills, along water-courses and in the bottoms of valleys. It would be interesting to try and identify these varieties of banana tree with the trees which produce abaca or Manila hemp, and to make comparisons between the fibers which they all produce.

In any case, seeds or plants could always be imported from Manila in order to create plantations in Laos.

Cinchona. The cinchona tree grows on land from which forestation has been newly cleared, at altitudes between 800 and 1200 meters. The soil must moreover be rich in humus. It would therefore seem that northern Laos is clearly indicated as a region for growing the cinchona (1). In the Laotian forests there is even a

(1) The Cinchona succirubra has been extremely successful in Jamaica and Java.

liana called "Khua-Khao-Ho" (2) which is used for its fever-inducing

(2) See Chapter III, p. 120.

properties. Both wood and bark are ground up, as is done with licorice root. It would be worthwhile to see whether this liana has any relation to the cinchona.

Cacao trees. This crop is among those whose introduction into Laos may be recommended. In order to develop, cacao trees need a hot and humid climate and high valleys with deep alluvia which are situated at altitudes between 100 and 200 meters. [390] Thus it might very well be that this shrub should prove successful in southern Laos.

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Coffee. The coffee bushes which have been planted in Laos by way of experiment in different regions and at different altitudes, depending on the variety (Liberian or Arabian), seem to be thriving. A few small plantations, like those on the Black River (on the frontier of the Sib-Song-Chau-Thai) and at the mission of the Bahnars, are even said to be producing a full yield already. But these results are still too sketchy for us to be able to state that the cultivation of coffe in Laos is ready to leave the period of experimentation and be undertaken on a large scale.

If it is true, as some say, that planting coffee in Annam and Tonkin has been extremely disappointing, then this does not offer encouragement for trying this crop in Laos.

Jute. The fiber of this plant is in great demand for making grain sacks and cloth wrapping material known as gunny. Although some jute is grown in Annam and Tonkin, in Indo-China we are still dependent for this product on British India, which sends us large quantities of it. The cultivation of this plant might be tried in Laos, in the higher parts of the country.

III

FOREST PRESERVATION AND CONSERVATION--REFORESTATIO

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The administration of Laos has made an effort to remedy, insofa as possible, the indifference of the population as concerns conservati of forest resources. It has taken measures to facilitate the reforestati of hills and plateaus which have been cultivated as rais.

These measures were indispensable, if any attempt was to be made to prevent the hills and hillocks of Laos, as well as the mounta sides, from becoming bald and sterile over the years as has already occurred in the Sib-Song-Pahn-Na and the northern regions. The heights do not have any trees or green foliage, the rock is bare on their [391] prominences, and only in the valleys which face to the north is there any soil containing vegetable matter.

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This deforestation and denudation are due to the annual burning which spread from one rai to another at the time when the inhabitant turn to new clearings. Out of indifference they allow the fires to consume the young vegetation which was beginning to cover the old rais and which, by holding back the soil containing vegetable matte was attenuating the destructive effects of erosion.

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Furthermore, the oft-repeated clearings cannot fail to have a certain influence on the atmospheric state of the region and on the constitution of the soil. Deforestation, in fact, brings about the demudation of high points all the way down to the rock which has not yet become decomposed, and rainwater, by carrying sterile alluvia down to the valley bottoms, partly obstructs the beds of rivers and causes the latter to overflow and erode their banks.

Furthermore, since clouds are no longer stopped by the forests which used to cover the heights they carry their fecundating water elsewhere at the very time when it is the most needed.

The result, in the last place, is a diminution in the yield from plains ricefields, which suffer from this insufficiency of natural irrigation.

Finally these clearings, made in a brutal, arbitrary and irrational manner, were causing the disappearance of useful varieties of trees forever. A little soda and potash is the only benefit to be drawn from combustion of the forests, and even this fertilizer is carried off by water in the following rainy season.

Henceforth, in accordance with the instructions published throughout the whole country by the superior administration of Laos and by the province administrators, cultivation on rais will be subject to the following regulations.

1. Sites to be cleared shall be determined by the local authorities, who shall choose land sufficiently far from old rais which are in the process of being reforested so that fires may be kept from spreading.

2. Rais in the process of being reforested shall be surrounded by a ditch [392] and by felled trees and brush. The owners of the nearest rais shall keep a careful watch, despite these precautions, in order to prevent fires from spreading.

3. When trees of a fine growth or of a useful variety are found on land which has been selected for the purpose of making a new rai, these shall be felled according to custom. But instead of burning them on the spot the woodcutters must push them off the limits of the rai and into a place safe from fire, so that they may later be utilized.

4. Furthermore, the local authorities shall oblige the inhabitants to sow or plant rapid-growing trees with roots sufficiently powerful to hold back the soil containing vegetable matter, over the whole area of abandoned rais.

By following the above procedure on all abandoned rais, it is to be hoped that they will be restored within fifteen or twenty years and will have enough humus so that they will again lend themselves to cultivation.

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When restored in this manner, their vegetation will reestablish the hygrometric regime of the region and the rational distribution of ground water.

FOREST PLANTATIONS

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Starting from the principle that trees of hardwood or precious varieties will rapidly disappear as soon as the forest riches of Laos are regularly exploited, a few administrators have thought that it would be wise to begin now and plant selected varieties.

This precaution will not seem either excessive or premature if one considers the time it takes for any tree whatsoever to reach full growth and acquire commercial value.

Since no reliance can be placed either on the people's initiative or on their willingness to concern themselves with plantings, it has been proposed that action be taken by way of authority. The inhabitants of each village, and particularly the registered inhabitants, would be forced to plant each year, in suitable spots which are easily accessible and near inhabited centers and watercourses, a certain number of trees of the [393] [Illustration] [394] [Blank page] [395] most useful varieties, which were well suited to the climate and soil of the region, and then forced to supervise their growth.

An example has already been provided in the way of teak plantations, for higher authorities had seeds of this precious tree distributed to the natives through their administrators.

The Laotians are so carefree and have so little concern for the morrow that many of them allowed the seeds to spoil without sowing them. It was necessary to issue orders and even make threats before the seeds were finally sowed.

One day we may therefore hope to see a great many teak trees rising from the ground where today there grow only the dwarfed and inferior quality trees of the forest glades. They will provide a source of inestimable wealth for the land (1).

(1) In Siam, teak exports represent an annual value of six to seven million francs.

Colonel Tournier, the Superior Resident in Laos, recently took the following measures for the conservation and reforestation of the teaks in the region of Xieng-Khong:

1. Designation by the Administration to the concessionnaire of trees which must be notched;

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2. The obligation on the part of the concessionnaire to rid the young teaks of the lianas which choke them;

3. The obligation to replant ten young teak shoots for every tree which is felled;

4. The obligation on the part of villages near groups of teaks to open up roads leading to these groups; a prohibition against making rais and cutting down trees without permission; the obligation to plant from fifty to a hundred teaks per house each year, depending on the remoteness of the village.

In return, the inhabitants of these villages need not fulfill the twenty days of labor drafts due each year.

Besides teak, we may recommend the planting of certain other trees, such as the "Mai-Niom-Pha" (mock mahogany), the "Mai-Thon" (mock walnut), the "Mai-Kha-Nioung" (mock rosewood), the "Mai-Lang-Dam" (ebony), etc.

The eucalyptus would doubtless grow well in certain regions of Laos.

PROVINCE EXPERIMENTAL GARDENS

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For several years now there have been experimental gardens in each commissionership. They serve as trial fields for the cultivation of certain European and Asian plants which are unknown or rare in Laos.

[396] These gardens are also schools of practical agriculture for the natives. Seeds and plants are distributed to the latter, and they are given extremely summary bits of information about certain plants whose cultivation would be advantageous from the point of view of commercial transactions. These gardens are destined to render services to future colonists, and the trials which are made there deserve encouragement.

Although not all heads of provinces possess the same degree of agricultural and horticultural knowledge, they devote the utmost zeal to making the most of their gardens. Seconded by their staff and guided by the enlightened counsels of the Superior Residency, of the department of Agriculture and of the directors of the botanical gardens of Indo-China, most of them have already achieved satisfactory results.

[113] The special periodicals such as the Bulletin économique de l'Indo-Chine, the Revue des cultures coloniales, etc. which are sent to each commissioner are of invaluable help in this connection (1).

(1) Some of the libraries in the commissionerships contain a book

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of the highest merit entitled Petit traité d'Agriculture tropicale, by H.A. Alford Nicholls, translated from the English by E. Raoul (Paris, 1895, Challamel). This work, which is as complete as it is practical, cannot be too highly recommended.

IV

LIVESTOCK BREEDING

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Without speaking of the poultry which goes to feed the population, the Laotians engage in breeding elephants, horses, buffalo, oxen, pigs, goats and silkworms.

Elephants. Elephant breeding is profitable, even [397] though this animal does not acquire any commercial value until about its fifth year. It is true that young elephants do not necessitate any special care or any expense, since they always go with their mother and provide for their own food.

In one part of the kingdom of Luang-Prabang, in a province on the right bank of the Mekong which numbers scarcely 13,000 inhatitants (Outhai-Tani), there were a hundred some domesticated elephants in 1898, plus twelve young ones which were the result of breeding. If the example of this province were followed throughout all Laos the number of elephants would rapidly increase, and within a relatively short time would constitute a new source of wealth for the country, one part alone of which was said to possess a million of these animals before the Siamese incursions (1).

(1) The kingdom of Luang-Prabang used to be called "Lan-Xang," The Land of the million elephants.

But with each invasion which Laos underwent, especially during the nineteenth century, the Siamese, the Annamites and the Cambodians did not fail to take turns despoiling it of this veritable wealth in order to increase their own.

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In southern Laos, breeding consists mainly in the training of young animals which have been recently captured. Thus in the province of Ban-Mouang the vast plains of the Se-Kampho and the Sepien provide excellent pasturages for elephants. Indeed, there are always fifty or so newly captured animals in the vicinity of Ban-Pa-Pho, which are being trained for sale. It is to be regretted that these beautiful plains are not used for raising livestock in general and

436 It will perhaps be of some interest to note here that the peoples of Laos have no respect for European gold coins, [420] because their gold 822 is alloyed with copper! In this country, as in all of the Far East in 439 general, it is thought that gold is the noble metal par excellance, that 177 it is polluted and diminished by alloying it with copper, which is unworthy of it, and that it can endure being made into an alloy only with silver.

The only "gold" coins in use, and still not at all currently in northern Laos, are books of gold leaf the thickness of tinfoil. They come from China and bear the official stamps of the country's banks which put them into circulation as "merchandise" in the same way as bars of silver.

Weighing instruments

405 The weighing instruments used in Laos include the "Ta-Dieng" or "Sing," a Chinese steelyard made of wood which has three rows of graduations. It may have a hook or a single platform, and is used for weights ranging from one "Sang" (1.23849 kilograms) up to several piculs.

For weights of less than a "Sang" the same kind of Chinese steelyard, with a hook or platform, is used, but it is smaller and made of ivory or bone.

A small pair of beam scales with platforms shaped like cupels, which is called "Sing-Dieng," is used mainly for weighing precious metals and gems.

There are several series of weights for balances. They are made of bronze, iron or copper and are most diverse in shape, representing elephants, imaginary birds, hexagons, pentagons, cones, pyramids, etc.

2. TRADE COMMODITIES AND PRODUCTS OF EXCHANGE

438 Since there is no industry to speak of in Laos, the local products 241 which make up the basic commodities of interior trade and exports come mainly from agriculture, livestock raising, scavenging, fishing and hunting. Mention may be made, however, of certain products of local, not to say familial, industry which enter into interior commerce and to some extent into the trade which goes on with neighboring countries.

438 [421] These include cloth goods of pure silk, either plain or 433 spangled with gold, goods of silk blended with cotton, and wholly cotton goods, then articles of jewelry and goldsmithing, and finally metals and ores from the still rudimentary mining industry and pottery goods, edge-tools, basketry, etc.

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with the greatest value on European markets, but woods which are very common in Indo-China are often just as highly esteemed. Among others we may cite the "Mai-Niang," the "Mai-Thon" (mock walnut), the "Mai-Deng" (rosewood), the "Mai-Dou" (thuja), the "Mai-Lang-Dam" (ebony), etc.

a great many other varieties of trees could be used to feed the sawmill and, like alcohol, find an easy outlet in Cambodia and Cochinchina.

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[519] Finally, one other enterprise might be attempted. This is livestock breeding and particularly the raising of oxen, which sell in Cambodia and Cochinchina for double their value in their country of origin. We have previously mentioned some of the points which would be particularly well-suited to undertakings of this nature. The greatest hazard to be feared is the appearance of epizootic epidemics such as the ones which occur almost periodically and against which there is no weapon. The Pasteur Institute of Nha-Trang does not send out [Illustration here] anti-plague serum as is done with cowpox vaccine, for as yet its incoulation must be left in the hands of specialists.

We believe that the system of livestock leasing would perhaps yield good results with the Laotian peasants.

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Since no serious attempt has as yet been made in Laos, it is difficult to treat of agricultural enterprises which Europeans might undertake. Nor must we forget that affairs of this sort require comparatively large sums of capital and professional knowledge which takes a long time to acquire. It is, moreover, up to the administration to provide the initial impetus, for it has the necessary means, equipment and personnel. When plantations have succeeded it [520] will easily find colonists to continue the work which has been begun, and capital will then find its way into Laos.

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Speaking for ourselves, we are persuaded that this land will soon be open to colonization. Only the coast of Indo-China is well-known, and on the day when it has been demonstrated that the mountains as well are a source of wealth, the fortune of Laos will be made. There is a blank page on which it is up to us, by profiting from the gropings and errors of the past, to trace the principles of true colonization, which provides well-being for the population and creates outlets for our industry and our commerce.

A very high official of Laos recently wrote, speaking of the development of this land: "Once everything was for Tonkin and

563 in a few particulars. They all inhabit the peaks of mountains, where they generally engage in the cultivation of poppies and maize.

[439 241] Hos. The Hos are genuine Chinese who came in with the caravans from Yunnan and settled in the land to engage in trade or to grow cotton (1).

(1) According to a monograph by Government Commissioner Grand.

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APPENDIX XVIII
NOTE ON THE EASTERN REGION OF LOWER LAOS (1)

[113] (1) Extract from a report by Colonel Tournier, Superior Commandant of Lower Laos. (Bulletin Economique de l'Indo-Chine, 1900, No. 19.)

PRESENT STATUS OF THE DIFFERENT KHA TRIBES

563 TRIBES LIVING ON THE GREAT ANNAMITIC CHAIN. 1. The tribe of Tha-Hoi may be regarded as being entirely pacified. It is a dependency of both Annam and Laos, but the spheres of influence of the two lands were perfectly delimited at the time of the establishment by Annam of the administrative post in Lao-Bao.

2. The Khon-Tou-Khas, the Ve-Khas and the Alak Khas are completely pacified and extremely tranquil. They are dependencies of Saravane.

Between the high valleys of the Se-Kemane and the Sesane (where the word Legnau, which is unknown in the region, is found on the Pavie map), there is an absolutely deserted region which serves as a buffer between the abovementioned tribes and the Cedangs.

[316] 563 567 3.The great tribe of the Cedangs, so far unconquerable. It occupies both sides of the chain, and its villages are situated in extremely difficult positions. The land is very poor, and until the last few years, besides the iron deposits which they work, their real commerce was the slave trade. All the Annamite slaves of the Mekong valley, both on the left bank and the right, came from raids made by these tribes in Annamite territory, even down as far as the sea. The abolition of slavery in Laos was a great blow to them, but since it is absolutely necessary for them to procure buffalo and oxen in order to live and especially for their superstitious practices, they still contime to make occasional captures in Annam and find a market for

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traditions and the annals which I have been able to consult, they are the descendants of the last kings of the land before the Cham invasion. The kings of Cambodia have had to appeal to them for help on one or two critical occasions, and it was in return for services rendered that the king of Cambodia, up until recent times, used to send them presents every year (annual tribute, according to them, payment of which stopped only five years ago).

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They have never been willing to recognize our authority. The king of Pa-Tao-la, who is situated on the Laotian side, twice attacked the Government Commissioners of Stung-Treng when the latter were making a tour of inspection in this region, first in December 1894 and a second time in January 1897. They were given a severe lesson this second time, for the village was entirely destroyed and they suffered many losses. The Sadete Loum (the Master of water) settled on the Annamite side alongside the Master of fire after the affair, and since that time has given no further orders to our faithful Djarais.

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APPENDIX XIX
NOTE ON THE MEOS

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The Meo has a savage and distrustful character. He does not like the presence of foreigners, or even of people of his own race. Clinging to the side of a mountain, and always as high up as possible, he asks only to be allowed to live in peace in his wild solitude and bodes no ill to anyone provided he is left alone and independen

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He is a great hunter of wild beasts and large game. More industrious than the Thais, he makes all his farming implements himself (picks and shovels), as well as his wooden buckets and mills for grinding maize and paddy. He raises fine poultry, pigs, oxen, goats and horses with particular care and success. If he stays in one place for any length of time he also produces, in addition to the maize and rice which form the basis of his food supply and the opium which he smokes, very fine eggplants, gourds, sweet potatoes and non-sweetened batatas very much like the common potato, sorrel, green beans and all the French vegetables whose seeds are given him. On his heights he cultivates the fruit trees which merely vegetate in the plains, such as the peach tree, and the peaches which he harvests can compete without any fear with those of our own country.

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The Meo climbs like a cat. Over sheer paths, up ladders composed of a single bamboo pole standing upright in which notches are cut at regular intervals which are large enough for two toes, the Meo